Attachment 1

Calculated of Expected Policy and Implementation Returns

Assumptions

- ARS is 2.5% of the total fund for all three implementation portfolios
- ARS beta to global equity = 0.20
- ARS beta to cash = 0.80
- All asset class returns are equal to the policy (benchmark) returns presented at the November 2010 ALM Workshop.
  - Forecasts were not presented for cash or for the ARS program
- Assumed annual compound returns:
  - Cash = 2.75%
  - ARS = cash + 3.5% = 6.25%
  - Global equity = 7.75%
- The equitization in the B implementation portfolio increases the exposure to global equity by 2% of the total fund.
  - The equitization is long equity futures with notional value equal to the ARS cash beta times the ARS market value
    B equitization notional = ARS cash beta * ARS market value
    = 0.80 * 2.5% of total fund
    = 2.0% of total fund

POLICY RETURN

<u>Historical and expected ARS returns</u>

Since inception through June 30, 2011, ARS has outperformed cash by 3.5% (5.66% vs. 1.96%, ARS Program Update, 8-15-11, p.18). This is an excellent return, outperforming other hedge funds by 1.43% annually (5.66 vs. 4.03%, ARS Program Update, IC 8-15-11, p.18). In this memo, ARS is assumed to continue to outperform cash by 3.5% per year.

<u>Policy (benchmark) portfolio returns</u>

A policy return

The policy portfolio A was approved by the Investment Committee in December (portfolio A7 with policy weights rounded to whole percentages). Its expected return of 7.38% was unaffected by ARS since ARS had a zero policy allocation.

B policy return

Policy portfolios A and B are identical and thus have the same expected returns.

C policy return

Policy portfolio C is the same as the other policy portfolios except that ARS has a 2.5% policy weight funded via an equal reduction in the global equity allocation.

Change in total fund return = (ARS return - equity return) * ARS policy wt.
= [(cash return + 3.5%) - 7.75%]*2.5%
= [(2.75% + 3.5%) - 7.75%]*2.5%
= (6.25% - 7.75%)*2.5%
= .04% = 4 basis points
Hence the portfolio C policy return = A policy return – 4 bp
= 7.38% - .04% = 7.34%

Assuming that ARS outperforms cash by 3.5% annually as it has historically, then adopting a 2.5% policy allocation to RMARS funded from global equity decreases the expected return of the total fund policy portfolio by 4 basis points.

<u>Implementation portfolio returns</u>

C *implementation portfolio return*
The implementation portfolio C is the same as its policy portfolio, so it has the same expected return (7.34%).

A *implementation portfolio return*
Implementation portfolios A and C are the same, so they have the same expected returns (7.34%).

B *implementation portfolio return*
Implementation portfolio B differs from its policy portfolio in the following:

i) Global equity securities portfolio is reduced by 2.5% in B
The change in total fund return = change in equity weight * equity return
= -2.5% * 7.75% = - 0.00194% = - 19.4 bp

ii) Equitization position goes from zero to 2.0%
The expected return on the equitization (long equity futures) is the equity return less the cash return
Change in total fund return = change in equitiz. wt. * equitiz. return
= 2.0% * (7.75% - 2.75%)
= 0.0010% = +10.0 bp

iii) ARS position goes from zero to 2.5%
The change in total fund return = change in ARS wt. * ARS return
= chg. in ARS wt. * (ARS return premium + cash rtn.)
= 2.5% * (3.50% + 2.75%)
= 0.00156% = 15.6 bp

The sum of these three effects is (-19.4 bp) + (10.0 bp) + (15.6 bp), or + 6.2 bp. The policy portfolio return of P2 plus 6.2 bp is 7.44% (7.38% + 0.06%).

As a check, the expected return of the equitization is the difference in the expected returns of equity and cash.[1]

Equitization return = equity return – cash return
= 7.75% - 2.75%
= 5.0%

The portfolio B equitization position is 2.0% of the total fund, so it is expected to increase total fund portfolio return by 10 basis points.

Effect of equitization on total fund return
= equitization return * equitization weighting
= 5.0% * 2.0%
= 0.1% = 10 basis points

[1] It is assumed that futures margin is satisfied with existing cash reserves, such as cash in the Liquidity asset class (that no additional cash is raised as a result of the equitization).